Contents

Preface the Special Issue on Tidal Science 1
—R. D. Ray and P. L. Woodworth

Once again: once again—tidal friction 7
—W. Munk

Energetics of the M_2 barotropic ocean tides: an estimate of bottom friction dissipation from a hydrodynamic model 37
—C. Le Provost and F. Lyard

Tidal data inversion: interpolation and inference 53
—G. D. Egbert

Dynamics of the long-period tides 81
—C. Wunsch, D. B. Haidvogel, M. Iskandarani and R. Hughes

Earth–Moon tidal evolution: model results and observational evidence 109
—B. A. Kagan

Some thoughts on the spring-neap cycle of tidal dissipation 125
—D. E. Cartwright

Surface manifestation of internal tides in the deep ocean: observations from altimetry and island gauges 135
—R. D. Ray and G. T. Mitchum

Global baroclinic tides 163
—L. H. Kantha and C. C. Tierney

Weak constraint data assimilation for tides in the Arctic Ocean 179
—G. A. Kivman

Multi-satellite ocean tide modelling—the K_1 constituent 197
—O. B. Andersen and P. Knudsen

A description of the tides in the Eastern North Atlantic 217
—E. Alvarez Fanjul, B. Pérez Gómez and I. Rodríguez Sánchez-Arévalo

Tidal currents in shelf areas—their nature and impacts 245
—D. Prandle

The Patagonian Shelf tides 263
—P. D. Glorioso and R. A. Flather

Reef parameterisation schemes with applications to tidal modelling 285
—L. Bode, L. B. Mason and J. H. Middleton

Errors in recent ocean tide models: possible origin and cause 325
—A. J. E. Smith and O. B. Andersen

A TOPEX/POSEIDON global tide model (TPXO.2) and barotropic tidal currents determined from long-range acoustic transmissions 337
—B. D. Dushaw, G. D. Egbert, P. F. Worcester, B. D. Cornuelle, B. M. Howe and K. Metzger

Testing recent global ocean tide models with loading gravimetric data 369
—M. Llubes and P. Mazzega

Effect of long-period ocean tides on the Earth's polar motion 385
—R. S. Gross, B. F. Chao and S. D. Desai

Oceanic tidal angular momentum and Earth's rotational variations 399
—B. F. Chao and R. D. Ray

The evolution of deep ocean pressure measurements in the UK 423
—R. Spencer and J. M. Vassie

Tidal Science 1996: concluding remarks 437
—D. E. Cartwright